

Work stress and cortisol level among shift workers in a tyre manufacturing factory in Selangor

ABSTRACT

Objective: A study was conducted to examine associations between work stress and cortisol hormone level among shift worker at a tyre manufacturing factory in Selangor.

Method: About 96 tyre manufacturing workers consisting of 56 shift and 40 non-shift workers were selected for this study. Majority of the workers were Malays (94.8%). Questionnaires were used to obtain their background information. Stress levels were determined using O'Donnel stress Questionnaire (Personal Stress Inventory). Other factors such as work, family and life events were also taken into consideration in evaluating the stress level of the shift worker. Saliva samples were collected from each respondent in the morning and after their shift work. Cortisol levels were determined using Salivary Cortisol Enzyme Immunoassay-Kit.

Result: No significant difference between stress scores related to family and work factors for both groups. However, there was a significant difference ($z=0.454$, $p=0.01$) in the morning cortisol hormone levels with that after work hours between the shift workers and the regular hours workers. Similar results were also found in the stress scores between the morning and night shift workers ($t=6.75$, $p=0.071$). No significant correlations between stress level (health problem scores) and cortisol levels found. The shift workers' work activity and the nature of work significantly influenced the cortisol level ($\chi^2=8.791$, $p=0.003$).

Conclusion: Shift work and work rotations have increased work stress as indicated by the salivary cortisol levels of the shift workers. The saliva cortisol level was higher after the shift work and it was influenced by the work activities and working conditions.

Keyword: Work stress; Salivary cortisol hormone; Shift worker